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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/964,897	09/28/2001	Pirmin Rombach	45900-000663	1309
30593	7590	12/31/2003	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C.			NI, SUHAN	
P.O. BOX 8910			ART UNIT	
RESTON, VA 20195			PAPER NUMBER	

2643  
DATE MAILED: 12/31/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/964,897

Applicant(s)

ROMBACH ET AL.

Examiner

Suhan Ni

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 09/22/03.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-17 and 23-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5,7,11,12,15-17 and 23-27 is/are rejected.
- 7) ☒ Claim(s) 6,8-10,13 and 14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)              | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>6</u> . | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

1. This communication is responsive to the amendment filed 09/22/03 and 10/27/03.

***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “**a plurality of canals**” in claim 27 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112, 2<sup>nd</sup> Paragraph***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

3. Claim 25 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 25, the recited limitation of “the properties of an added material” in line 2 is indefinite, since it is not clear what the limitation is.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) The invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

4. Claims 1-3, 7, 11 and 23-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Plice et al. (US-4,000,381).

Regarding claim 1, Plice et al. disclose a miniature actuator, comprising: a first and second flux generator (56) for generating a controllable first and second magnetic flux; a movable diaphragm (34); and means for generating a permanent magnetic flux, wherein the movable diaphragm is positioned between the first and second flux generator (Fig. 1) as claimed.

Regarding claims 2-3, Plice et al. further disclose the miniature actuator, wherein the first and second flux generator each comprises a conductive coil (Fig. 1) as claimed.

Regarding claim 7, Plice et al. further disclose the miniature actuator, wherein said means for generating the permanent magnetic flux (44) is symmetrically configured as claimed.

Regarding claims 11 and 26, Plice et al. further disclose the miniature actuator, wherein said movable diaphragm is made of copper as claimed.

Regarding claims 23-25, Plice et al. further disclose the miniature actuator, wherein said movable diaphragm includes a substantially stiff central magnetic portion (44), and a resilient peripheral portion (34) as claimed.

Regarding claim 27, Plice et al. further disclose the miniature actuator, wherein a canal means (28) is adapted to the center part of the movable diaphragm for air-cooling as claimed.

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4-5, 12 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Plice et al. (US-4,000,381).

Regarding claims 4 and 12, Plice et al. do not clearly teach the coils as claimed. Since providing a suitable coils with desirable coating material for an acoustic actuator is very well known in the art, it therefore would have been obvious to one skilled in the art at the time the invention was made to provide the suitable coils with desirable coating material, such as a synthetic polymer coating for the miniature actuator as an alternate choice, in order to make the actuator more durable.

Regarding claim 5, Plice et al. do not clearly teach how to connect the coils as claimed. Since providing a connection of two voice coils in same or opposite direction for an acoustic actuator is very well known in the art, it therefore would have been obvious to one skilled in the art at the time the invention was made to desirably connect the coils, such as in parallel with opposite direction of the miniature actuator as an alternate choice, in order to obtain a desirable acoustic effect for certain applications.

Regarding claims 15-17, Plice et al. do not clearly teach for how to utilize the actuator as claimed. Since Plice et al. do not specially restrict the usage of the actuator, and suggest for utilizing the actuator for miniature electronic device (col. 1, line 62 to col. 4, line 13), it therefore

would have been obvious to one skilled in the art at the time the invention was made to provide the miniature actuator for a suitable handheld device, such as a cellular phone, in order to utilize the miniature actuator.

***Allowable Subject Matter***

6. Claims 6, 8-10 and 13-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Amendment***

7. Applicant's arguments dated 09/22/2003 have been fully considered, but they are not deemed to be persuasive.

The cited reference (U.S.P.-4,000,381) does clearly show a miniature actuator, comprising: a first and second flux generator (56) for generating a controllable first and second magnetic flux; a movable diaphragm (34, 44); and means for generating a permanent magnetic flux, wherein the movable diaphragm is positioned between the first and second flux generator (Fig. 1) as claimed.

Regarding claim 1, the applicants argue that the prior art "does not disclose that the movable diaphragm is positioned between the first and second flux generators" (page 8, lines 16-17). But the examiner respectfully disagrees with the applicants. Figure 1 of the prior art clearly shows a pair coils (56) acting as a first and a second flux generator, and a movable diaphragm (34) positioned in between the coils.

***Conclusion***

8. **THIS ACTION IS MADE FINAL.** See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

9. Any response to this final action should be mailed to:

**Commissioner of Patents and Trademarks  
Washington, D.C. 20231**

Or faxed to:

**(703) 308-9051**, (for formal communications; please mark "EXPEDITED PROCEDURE"), or

**(703) 305-9508**, (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to:

**Receptionist, Sixth Floor,  
Crystal Park II,  
2121 Crystal Drive,  
Arlington, Virginia 22202**

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Suhan Ni** whose telephone number is **(703)-308-9322**, and the number for fax machine is **(703)-305-9508**. The examiner can normally be reached on Monday

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through Thursday from 9:00 am to 7:30 pm. If it is necessary, the examiner's supervisor, **Curtis Kuntz**, can be reached at **(703) 305-4708**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is **(703) 305-3900**.

Suhan Ni  
Patent Examiner  
Art Unit 2643  
USPTO

  
SUHAN NI  
PATENT EXAMINER

December 19, 2003